



FIG. 11. Case XI. E. H. Extensive basal cell carcinoma of outer canthus successfully treated by roentgen therapy. *A*, October, 1944. Infiltrating induration of lower lid and outer canthus. *B*, lesion treated by $2 \times 2,200$ r in air, 140 kv. (peak), no filter. Eyeshield beneath lids. *C*, December, 1944. Carcinoma is controlled, lid healed and well preserved.

final results from roentgen therapy were still somewhat undisclosed. Roentgen therapy has now become our radiotherapeutic method of choice due to its proved effectiveness, accuracy, simplicity and restriction of exposure more closely to the

diseased area. The scars from roentgen therapy may be slightly more apparent due to their sharper delimitation, but this can be reduced by multiple exposures and through the use of fenestrated screens of slightly varied size and shape. The feasibility of more adequate protection of the lens against roentgen rays than against gamma rays has already been discussed at some length. Roentgen therapy is advantageous, as pointed out by Regaud and others,³¹ and Widmann³⁹ in the treatment of lesions which cover large surfaces and in lesions showing deep infiltrations of the orbital or medial canthal structures.

The technical factors currently employed by us in roentgen therapy to cancer of the eyelid vary with the thickness and extent of the lesion. Our observations have led us to believe that scars are less atrophic, more pliable and durable in those cases to whom fractionated dosage has been given in contrast to a single massive dose, even though the neoplasm can be effectively eradicated by either the massive dose or fractionated dosage. In the case of lesions over 5 mm. in size, fractionation is desirable. The larger the lesion in extent, the more advisable fractionation becomes in order to preserve the health and nutrition of the tumor bed. Fractionation is also advantageous in lesions over 3 or 4 mm. in thickness, since shrinkage of the tumor following initial exposures permits more effective exposure of the base of the cancer, with relatively less irradiation of underlying tissues.

Inasmuch as roentgen dosage on small lesions is usually recorded in air without backscattering, it is essential to bear in mind that air dosage must be increased about 10 to 50 per cent when dealing with lesions less than 10 to 5 mm. in size in order to deliver dosage comparable to that developed in a lesion 20 to 30 mm. in size. Roentgen radiation energized by 70 kv. (peak) and without the employment of additional filtration is usually sufficient for eradication of the smaller and more superficial carcinomas of the eyelid. Lesions over 3 to 4 mm. in thickness warrant 90 kv.